Journal of Testing and Evaluation
Table of Contents, Volume 11
1983

No. 1, January

Effects of Temperature on the Fracture Toughness of Carburizing Steels for High-Temperature Applications—R. A. CUTLER AND W. C. LESLIE 3
Life Expectancy for Fossil Steam Turbine Casings after 100 000 Hours—P. A. COULON, HENRI SAISSE, AND GUY THAUVIN 16
Review of the Effects of Fatigue Cracking Loads on Plane Strain Fracture Toughness—O. L. TOWERS 27
Fatigue Crack Front Shape and Its Effect on Fracture Toughness Measurements—O. L. TOWERS 34
In-Plane Compression: A New Laboratory Forming Technique to Study the Effect of Large Drawing Deformations in Sheets on Their Subsequent Mechanical Behavior—P. L. CHARPENTIER AND H. R. PIEHLER 46
A Summary of Fracture Mechanics Concepts—F. R. IRWIN AND ROLAND DE WIT 56
Cyclic Stress-Strain and Fatigue Properties of Sheet Steel as Affected by Load Spectra—J. F. MARTIN 66
Fracture Mechanics Analysis of the Effects of Residual Stress on Fatigue Life—J. F. THROOP 75
Determination of Stress Relaxation by Damping Measurements—G. F. WEISSMANN 79

No. 2, March

Shear Transfer in Concrete and Polymer Modified Concrete Members Subjected to Shearing Loads—EDWARD G. NAWY AND MAURICE M. UKADIKE 89
Experimental Analysis and Numerical Simulation of Marshall Method of Asphalt Concrete Mix Design—MICHAEL S. MAMLOUK AND GEORGE D. MANOLIS 99
Mechanical Sampling with Stopped-Belt Accuracy—JACK J. ELLIS 106
The Most Probable Pore-Size Distribution in Fluid Filter Media
I. Evidence of Such a Distribution from Results of Extended Bubble-Point Measurements 117
II. Determining the Size of the Average Pore from Fluid Permeability Measurements—PETER R. JOHNSTON 122
Predicting Heat-Affected Zone Hardness by the Weld Test Method—MALCOLM J. BIBBY, LAN-MENG CHONG, AND JOHN A. GOLDAK 126
Vibratory Cavitation Tests at 200-kPa (2-Bar) Suppression Pressure—YUKANG ZHOU AND FREDERICK G. HAMMITT 134
Confidence Limits of Stress Values Measured by X-Ray Diffraction—MASANORI KURITA 143
Accuracy and Precision of Crack Length Measurements Using a Compliance Technique—ROY L. HEWITT 150
High Pressure Fatigue Testing with Results for Tubing and Fittings—WILLIAM N. FINDLEY AND RAY M. REED 156

No. 3, May

Fractographic Examination in the Scanning Electron Microscope as a Tool in Evaluating Through-Thickness Tension Test Results—MAUREEN M. McDONALD AND DAVID C. LUDWIGSON 165
Numerical Analysis of Ductile Fracture Experiments Using Single-Edge Notched Tension Specimens—THOMAS HOLLSTEIN, WINFRIED SCHMITT, AND JOHANN G. BLAUEL 174
Stressing for Test Purposes of Materials in Tubular Form Using Elastomeric Inserts—Practical Testing Procedures—KENNETH MOSLEY 182
An Improved Method for Threshold Fatigue Crack Propagation Testing on an Electromagnetic Resonance Type Machine—SATOSHI NISHIJIMA, SABURO MATSUOKA, AND SHOICHI OHTSUBO 193
A New Transducer to Monitor Fatigue Crack Propagation—PETER K. LIAW, HANS-RUDOLF HARTMANN, AND WILLIAM A. LOGSDON 202
On the Yield Loads of Plates with Array of Holes—UDAY C. JINDAL AND MOHAN L. MANDAL 208
J_{Ic} Measurement Point Determination for HY130, CMS-9, and Inconel Alloy 718—JAMES R. MATTHEWS AND GERALD D. WEST 217
Short-Range Ordering in Nickel-Chromium Thermocouple Alloys—DANIEL D. POLLOCK 225

No. 4, July

Prediction of the Shift in the Brittle-Ductile Transition Temperature of Light-Water Reactor (LWR) Pressure Vessel Materials—METAL PROPERTIES COUNCIL SUBCOMMITTEE 6 ON NUCLEAR MATERIALS 237
Summary Report of Round Robin Testing by the ASTM Task Group E24.01.06 on Rapid Loading Plane-Strain Fracture Toughness K_{1c} Testing—A. KENT SHOEMAKER AND R. RODGER SEELEY 261
A New Test Method for Determining Environmental Stress-Crack Resistance of Ethylene Based Plastics—JOHN M. CRISSMAN 273
GEOTHERMAL SEALS SYMPOSIUM
Cross-linking of Polyfluoroolefin Copolymers—MILOS HUDLICKY 279
Ethylene-Propylene-Diene Monomer (EPDM) and Fluorocarbon (FLM) Elastomers in the Geothermal Environment—H. JAMES HARWOOD 289
A Basis for Predicting Longtime Behavior for Short-Time Tests of Geothermal Sealants—ELLIOT A. KEARSLEY 299

No. 5, September

Positron Evaluation of Hydrogen in a 17 Nickel Maraging Steel—KEVIN D. MOORE, FRANKLIN H. COCKS, AND PHILLIP L. JONES 309
A Pilot Experiment to Determine the Feasibility of Reconstituting Tested Irradiated Charpy V Specimens—PETER R. BURCH 312
Variances in Sampling Streams of Coal—CHARLES D. ROSE 320
Analysis of Nonlinear Behavior of Asphalt Concrete During Marshall Test—MICHAEL S. MAMLOUK, YAO M. YUAN, NIEN T. TSENG, AND GEORGE C. LEE 327
A Constant Amplitude Fatigue Study of an Aluminum Powder Metallurgy Alloy—J. S. SANTNER AND GREGORY CAMPBELL 333
A New Method for the Determination of the Critical Value of Crack Tip Opening Displacement at the Initiation of Crack Growth Using a Single Three-Point Bend Specimen—ZUHAN LAI AND JIAMIN ZHANG 340
Contextual Effects in Category Ratings—HARRY LAWLESS 346
Certificate Values—What Do They Mean and How they Should be Used—HARRY H. KU 350

No. 6, November

Analysis of an Internally Radially Cracked Ring Segment Subject to Three-Point Radial Loading—BERNARD GROSS AND JOHN E. SRAWLEY 357
Temperature Effect on Rheological Properties of Cattle Manure Slurry—YUD-REN CHEN AND E. L. SHETLER 360
SYMPOSIUM ON CONTROLLED ACCESS SCREENING FOR AIRPORT SECURITY AREAS
Introduction—JOHN P. BATTEMA 365
The Effectiveness of Passenger Security Screening—An Overview—T. P. TSACOUMIS 366
Safety Considerations for Photographic Film in the X-Ray Screening of Air Travelers' Luggage—V. GLENN MCININCH 368
Cost-Effectiveness of the Passenger Security Screening System—RICHARD A. CHILDS 376
Training the Security Screening Station Operator—JOHN M. HUNTER 379
Passenger Screening Requirements—The View from Europe—ANTHONY G. KEANE 381
SYMPOSIUM ON REFERENCE MATERIALS AND THEIR USE IN NUCLEAR FUEL CYCLE
Reference Materials—What They Are and How They Should be Used—JOHN K. TAYLOR 385
Reference Materials—What is Available?—CARLETON D. BINGHAM 388